



WATTSON

SMART ENERGY ASSISTANT

FLORIAN DEJONCKHEERE, OTTO HELDT, JONI RAJAMÄKI, USAIRIM ISANI

THE TEAM



**FLORIAN
DEJONCKHEERE**



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HELDT**



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AGENDA

Overview of the solution

Technologies used

Methodology of development

Features of the solution

Roadmap for the final version

Schedule for development

Q&A



WATTSON

Visualize data from HL-EMS

Energy consumption

Energy production

Price prediction

Energy **alerts** and **suggestions**





GOAL

Facilitate real-time **energy monitoring**

Provide **energy saving suggestions**

Intuitive **visualization** of energy usage



TECHNOLOGY

TypeScript as language

Vite as environment

React as application framework

Jest as test framework

TailwindCSS as interface framework

Heroicons as icon set

Docker as deployment model

Github for source code

scrum board

issue tracker

continuous integration

continuous deployment



METHODOLOGY

Agile framework

1 sprint of 21 days

Tasks: planned → in progress → done

Pull requests: **code review**



COMPLETED

Authentication: sign in, sign up, change password, delete account

Real-time summary

Battery status

Cost prediction based on predicted energy price and usage

Historical visualization: consumption, production, grid frequency

Energy **alerts** and **suggestions**

Accessibility: dark mode



AUTHENTICATION



Wattson

Don't have an account yet? [Sign up here](#)

Username

wattson

Password

.....

Sign in



Wattson

Already have an account? [Sign in here](#)

Email

wattson@example.com

Username

wattson

Password

.....

Sign up

REAL-TIME SUMMARY

Real-time summary

What's going on at the moment

Total power

47 W

Voltage

235.1 v

Current

2.0 A

Predicted energy price

13.04 c€/kWh

Today

Predicted energy cost

0.06 c€/h

Today

BATTERY STATUS

Battery status

State of charge and power flow

Charging status



Battery capacity

9.6 kWh

Battery health

100 %

Total energy charged

592 kWh

As of yesterday

Total energy discharged

592 kWh

As of yesterday

ENERGY USAGE

Energy consumption

Track the historical use of energy

Tyyssija ▾

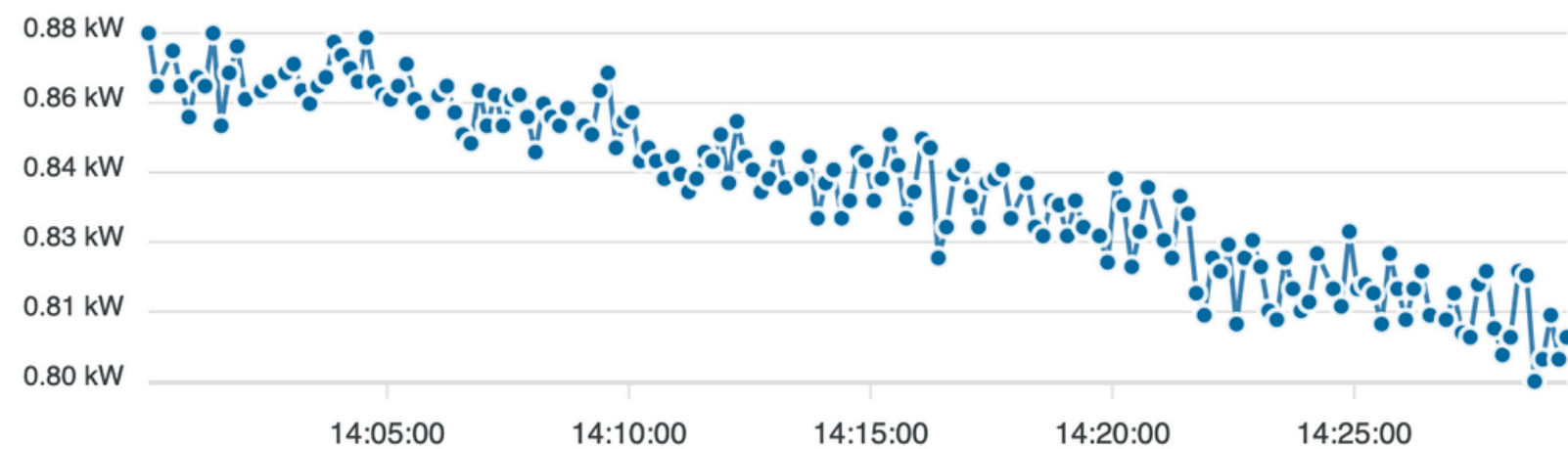
Heat pump ▾

Start time

11/12/2023, 15.00 📅

End time

11/12/2023, 16.00 📅



Energy production

Track the historical production of energy

Ruissalo ▾

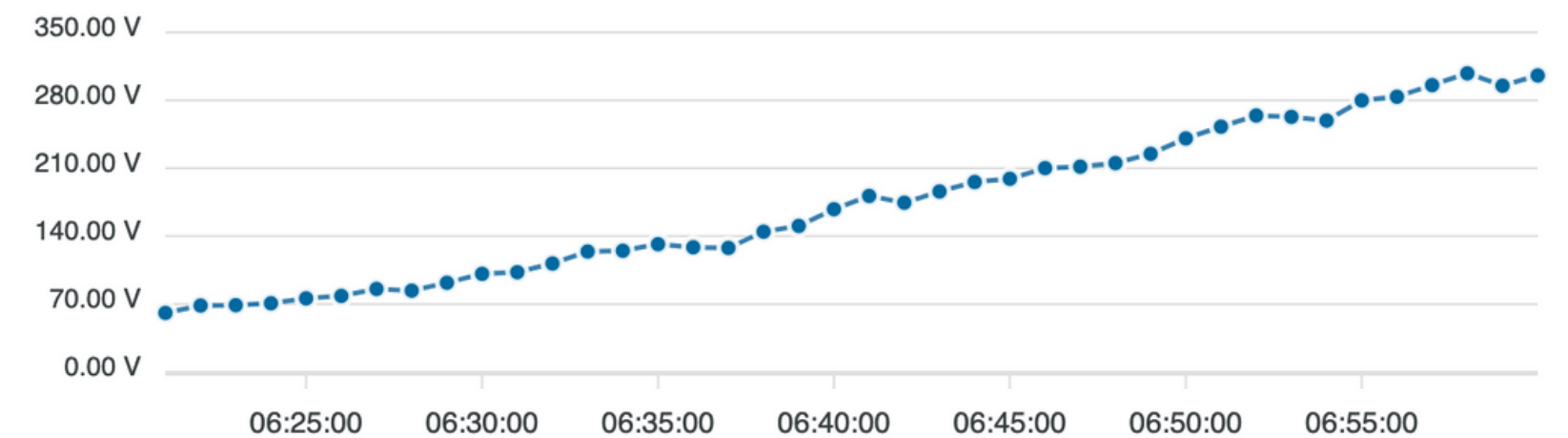
Fronius ▾

Start time

03/11/2023, 07.00 📅

End time

03/11/2023, 08.00 📅



ALERTS AND SUGGESTIONS



wattson
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S



Energy Alerts



New device

A new device was detected: Smart Hub



Energy usage

Heat pump used 13% more energy last month



Unplug EV

Your EV has been fully charged since 2 hours ago, unplug it from the shared charger to allow other residents to use it

Energy suggestions

Switch off lights

Switch off lights and electrical appliances when you are not using them. Equipment such as computers, heaters and cooling units use a lot of energy, even when they are in low power or standby mode. Chargers that are plugged in but not in use also consume energy.

Remind me later

Next suggestion

DEMO

[HTTPS://WATTSON.DEJONCKHEE.RE](https://wattson.dejonckhee.re)





ROADMAP

Visualization of energy distribution

Device **administration**

Internationalization and **localization**

Responsive design

Carbon footprint based on real data

Personalized **energy suggestions**



SCHEDULE

45 days development time

Three sprints of two weeks

Features to be negotiated

Four developers working part-time

Continuous feedback and collaboration

¿QUESTIONS?

KIITOS!